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The names Victoria and Albert Nyanza, given these lakes by their British discoverers to mark a British enterprise, constitute reasons why Ibrahim should be maintained to mark an Egyptian enterprise.

I submit that the foregoing facts, which have been set forth *in extenso* in the BULLETIN of the American Geographical Society for January and June, 1904, and January, 1908, constitute for me a place in the history of Nile exploration as having completed the discoveries of Speke and Baker, having followed immediately that of Baker.

CH. CHAILLÉ-LONG,
Corresponding Member.

GEOGRAPHICAL RECORD.

NORTH AMERICA.

THE NATIONAL FORESTS.—The regions recently declared, by proclamation of the President, to be set aside as forest reserves, are the Ocala National Forest in Marion County, eastern Florida (the first created east of the Mississippi River), and the Dakota National Forest in Billings Co., N. D. Thus, two more States are added to the list of those wherein land will be put under scientific forest administration. There are now nineteen States and the Territory of Alaska having national forests. The Florida Forest has an area of 201,480 acres, of which about one-fourth has been taken up under various land laws. It covers a plateau between the St. John's and Ochlawaha rivers, and at no point is the elevation over 150 feet above sea-level. The new Dakota National Forest, consisting of 14,080 acres in the Bad Lands region, is important, for it means that an experimental field for forest planting has been secured in North Dakota, the least-forested State in the Union, having only 1 per cent. of tree growth. The Forest Service expects to establish forest nurseries, with the hope that, in time, the area may be reforested by artificial means. Before the creation of the Ocala National Forest in Florida, the Ozark and the Arkansas, in Arkansas, were the most eastern national forests. Practically all the other national forests are in the Rocky Mountain and Pacific Coast States.

CARIBOU ON QUEEN CHARLOTTE ISLANDS.—The *Ottawa Naturalist* for March says that the long-debated question as to the existence of caribou on the Queen Charlotte Islands has been settled in the affirmative. It seemed improbable that such large and active animals could have existed unseen in an area comparatively so small. However, they are there, and Indians recently killed three of them which they discovered in the interior of Graham Island. They presumably belong to the species known as *Rangifer dawsoni*. In view of this discovery, the Government of British Columbia has prohibited the hunting, killing or capture of caribou on these islands.

THE CHARTING OF NORTHERN LABRADOR.—The survey and charting of Northern Labrador, last summer, under the personal direction of Sir William McGregor, Governor of Newfoundland, and Dr. William T. Grenfell, of the Labrador Mission field, were most important, for they covered a region that has, hitherto, been

practically unknown. The survey embraces all that portion of the peninsula lying north of Port Manvers, in latitude 57° N., not far from which is the Moravian Mission of Okkak and a station of the Grenfell Missionary Association on the outlying island of St. Paul.

Gov. McGregor says that the scenery of this region is unsurpassed, and that it must eventually become as much an objective point of summer travel as the North Cape of Norway. The peninsula is found also to be an undeveloped mineral asset of great value, "unrivalled for geological and prospective work, having an important mineralogical future." Added to the sealing, fishing and fur industries, the newly found mineral resources will give the region much importance.

There are excellent harbours all the way along the coast and no coastal waters will be easier to navigate, after the hydrographic maps are published, than those from Cape Mugford to Cape Chidley at the north end of the peninsula. Eclipse Harbour, south of Cape Chidley, was so named from the scientific party that made it the observation point of the annular solar eclipse of 1860.

The Governor and Dr. Grenfell hope to have the hydrographic work completed by next September. Already this coast presents a scene of considerable activity. Last summer fifty-nine schooners were counted at one time, and saw-mills, fishing stations, trading posts, and the monthly mail boat enliven the shores.

C. H.

A NEW CAMEL FROM THE LOWER MIOCENE OF NEBRASKA.—In the autumn of 1906, Harold James Cook found a nearly complete skeleton of a camel, in the Lower Harrison Beds, near Agate, Sioux Co., Neb. The skeleton is finely preserved and articulated. It had apparently been washed into a heap while the muscles still held the bones together, for it is literally tied in knots. On this account it has only been partly removed from the matrix, and so a complete description is deferred.—*Amer. Naturalist*, Lancaster, Pa., March, 1909.

THE COAST AND GEODETIC SURVEY.—The *Annual Report*, July 1, 1907, to June 30, 1908, covers 169 pages with nine maps in pocket. An important feature of the year's work was the completion of the reconnaissance for the extension of the primary triangulation from the 98th meridian in central Texas across New Mexico, Arizona, and California to the triangulation of the same class extending along the Pacific Coast across California, Oregon, and Washington. It extends along an arc of the parallel for about 1,200 miles, and the work was begun and completed during the year. This triangulation, when completed, will connect with the international boundary between the United States and Mexico in many places, and will make it possible to replace this boundary exactly in position, even though the monuments which now mark it were destroyed.

The completion of the triangulation along the 98th meridian was also an interesting feature. This triangulation now extends across the country from Canada to Mexico, supplying numerous geographic positions in Minnesota, North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas. It is also an important meridional arc which this country contributes to the International Geodetic Association for the study of the figure of the earth. The Mexican Government is extending this arc in Mexico, and Canada, also, has begun a geodetic survey as a permanent basis for all future geographic and economic surveys in which great accuracy is desirable.

The triangulation which is being extended along the 141st meridian, the boundary between Alaska and Canada, will supply geographic positions from Mount St. Elias to the Arctic Ocean that can be used for all future surveys which the economic development of the region may demand. Details of the progress of magnetic, hydrographic, and topographic surveys are given. (See New Maps.)

STATE GEOLOGICAL SURVEYS.—The *Reports* of the Geological Survey of North Dakota are issued biennially. The next to appear will be the volume for 1907-08, the fifth in the series. Among the investigations reported upon in the published volumes are: Vol. 2—Lignite resources of the State, especially important in view of the practical non-existence of forests in North Dakota. A series of papers on this subject give the results of preliminary studies by Dr. Frank A. Wilder and Mr. L. H. Wood. Dr. Wilder, also writing on irrigation, said that throughout the western part of North Dakota, lignite would afford a cheap and abundant fuel for irrigation purposes. Vol. 3—Dr. Wilder reported that the possibility of irrigating considerable tracts along the Missouri and its tributaries, using lignite as fuel, appeared most encouraging. Prof. A. G. Leonard, who succeeded Dr. Wilder as State Geologist, in the summer of 1903, reported on the topographic features and geological formations of the State, and Prof. E. F. Chandler treated "Stream Measurement and Run-off of Streams in North Dakota." Vol. 4—The Fourth Biennial *Report* was devoted to the clays of the State and their economic importance. The State Geologist urged that the topographic survey should be pushed more rapidly by State co-operation with the Federal Survey. All the *Reports* are copiously illustrated with half-tones and maps.

The Oklahoma Geological Survey was established by the first Legislature of the State in 1908. Circular 1 describes its origin, scope and purpose. It is under the direction of the State Geological Commission, composed of the Governor, the President of the State University, and the State Superintendent of Public Instruction. Its purpose is to study the geological formations, with special reference to the economic resources, to prepare bulletins and maps, and to make a biennial *Report*. Materials collected are to be deposited in the State Museum, duplicates to be distributed among State schools. The offices of the Survey are in the State University. Professor Charles N. Gould is Director of the Survey and Mr. L. L. Hutchison Assistant Director. Preliminary reports on the building stone, oil and gas resources and road material of the State and on the economic products of the Arbuckle Mountains will, it is expected, be published at an early day. While Oklahoma has mineral resources in great variety and abundance, very little of this wealth, as yet, is being developed.

The Geological Survey of Georgia has issued, as *Bulletin* 18 (453 pp.), the report of Assistant State Geologist Otto Veatch on the clay deposits of the State. The first report in 1898 was confined to the Cretaceous clays along the Fall Line, but the present report includes both the Fall Line clays and those of all parts of the State. High grade kaolins and fire clays occur in great abundance. The volume has many half-tones and maps.

The Geological Survey of Louisiana has published a report on "Rock Salt" (*Bull.* 7, *Report* of 1907, 259 pp., plates, figures and maps), by G. D. Harris, C. J. Maury and L. Reinecke. Rock salt is treated in its origin, geological occurrences, and economic importance in the State, and all known salt deposits and industries of the world are briefly referred to.

REPORT OF THE MISSISSIPPI RIVER COMMISSION FOR THE YEAR ENDING JUNE 30, 1908.—The work of the Commission is stated under five headings, and these serve somewhat as an index of the contents:

1. Continuation of surveys; preparation and publication of maps; maintenance of gauges; the recording, tabulation, and publication of gauge readings; the taking and recording of discharge measurements at high and low stages of the Mississippi River and its tributaries, and other observations.

Every high-water season has its characteristic feature. During the year covered by this report, the duration of the high stages in the lower river was excessive. Four crests were recorded at Cairo, occurring on Feb. 26, March 18, April 13 and May 19, with a stage about 6.6 feet lower than the highest recorded at that station. The first three rises merged into one before New Orleans was reached and caused a prolonged period of high water. The water stood above the 15-foot stage (Carrollton gauge) for over 100 days. This record has not been exceeded, and the nearest approach to it was during 1903, when the river maintained itself above that stage for 85 days. At Cairo, 40-foot stages or more were recorded for 77 days. This record was exceeded during 1882, when the river was above the 40-foot stage for 105 days.

2. The building, extension and repair of levees.

One and a half per cent. of the contents of the levees were lost by caving or other causes during the year, but the net gain was $4\frac{1}{2}$ per cent. This makes, as near as it is possible to estimate it, the levees about 81 per cent. completed.

3. The building, maintenance and operation of dredge boats.

The maintenance of a channel depth of 9 feet with a width of 250 feet was, in comparison with the work of previous years, a relatively easy task during the low-water season as the river did not fall to a low stage.

A new project included experimental dredging operations at three points (Linda, Island 35 and Corona Crossings), in order to test the possibility of maintaining a 14-foot navigable channel. At the Linda and the Island 35 crossings, the depth was maintained; but the experiment was not so successful at Corona crossing. The Commission reports that the difficulty here could have been avoided by the choice of another channel. It is to be noted, however, that the river did not fall as low as is generally the case during the season of experimentation.

4. The repair and extension of existing works for the improvement of the channel, the preservation of harbours, the prevention of cut-offs, and the security of levees.

The Commission is urging an increased appropriation for revetments. This call for revetments is a new stage of the work which is necessitated by the near completion of the levee system. The earlier policy, before the levees had reached such dimensions, when caving threatened the destruction of the levee, was to abandon the structure and to build loops or new lines farther away from the river. The greater size of the present levees makes such a policy expensive, and the Commission now insists that the only economical way to maintain the levee system is to hold the banks against caving. It is pointed out, furthermore, that the caving at New Orleans is a serious menace to the growth of that city as a seaport, and that the protection of the banks at this place against slipping and the assurance of a stable front for docking privileges demand a larger portion of the appropriation than has formerly been allotted to this work.

5. The maintenance of a low-water channel between the Mississippi, Red and Atchafalaya rivers.

The report has a number of interesting plates. In addition to the hydrograph, there is added a profile of the high water of 1907, together with the profiles of the 1903 and 1906 crests for comparison, and sixteen plates showing in profile the top of the levees and the high-water slope for June, 1908, with the location of levees and revetments.

R. M. B.

SOUTH AMERICA.

SURVEY WORK ON THE FRONTIER BETWEEN BOLIVIA AND BRAZIL.—The pioneer service of boundary commissions in new countries is again brilliantly illustrated by the fascinating but brief account of really heroic explorations by Major P. H. Fawcett (*Geog. Jour.*, Vol. 33, 1909, pp. 181-185). He was appointed Chief Bolivian Commissioner to resurvey the Bolivian frontier as determined by the treaty of Acre in 1903. The work involved the determination of the position of the Acre River with respect to parallel 11° S. The sources of the Iquiy and Rapirran were determined, the Alto Acre ascended, and the Abuna navigated in a small boat to its confluence with the Madeira. One gains from the brief account a very clear picture of the appalling difficulties of exploration and development in many sections of South America. The whole region explored by Mayor Fawcett is inundated every year and villainously unhealthy. The man-eating anaconda, the jaguar, Brazilian criminals, the whole list of tropical fevers and beri-beri are a few of the scourges of the Acre and Abuna region; while savages range the forests west of the confluence of the Yaverija, near which rubber exploitation ends. As a result of the explorations, Brazil is willing to accept the Alto Acre as the frontier line from Bahia directly west to the source of the Rapirran, and east down the Abuna. "The Iquiy disappears from the treaty, its position having been misunderstood. A joint commission will put up the frontier marks probably in 1911."

The second part of Major Fawcett's work was the boundary exploration on the Paraguay and the discovery of the true source and course of the mysterious Verde, that tributary of the Guaporé which has baffled the efforts of five government commissions. So hazardous was the latter exploration considered that the Brazilian Commission declined to supply a representative. Civilization ends completely at Matto Grosso, where a horrible disease called "corupcion" ends that long list of infirmities which make this section probably the unhealthiest in the world. Anthropophagous savages abound within gunshot of the old city. For two months the party was without food (or even salt), save for chunta nuts and the heart of the palmetto palm. Three out of six peons died and all of the dogs succumbed. The deep 300 ft. gorges, cut in sandstone hills, made the ascent of the Verde from its junction with the Guaporé extraordinarily difficult for a famished party. Hostile savages made necessary a double sentry every night. The system of slavery in the rubber districts, called peonage for politeness sake, and the raids upon formerly peaceful tribes to which it has led, have aroused bitter hostility among the Indians whose friendship should have been especially fostered in that singularly labourless land.

I. B.

ECUADORIAN EXPORTS.—The specialization of certain South American countries, engaged in almost purely extractive industries, is well illustrated by the list of

exports for 1908 from Ecuador *via* the port of Guayaquil, practically the sole port of entry for that country (*Daily Con. and Trade Rep't*, No. 3414). The exports of cacao amounted approximately to 64,000,000 pounds, valued at \$6,400,000, beside which all other exports are almost insignificant: hides, \$135,000; coffee, \$273,000; vegetable ivory, \$102,000; rubber, \$235,000. The value ratio of cacao to the rest of the list is thus seen to be nearly 1 to 8. It will be of interest to see how the relative as well as the absolute values will be affected by the railroad recently completed to Quito on the interior tableland. I. B.

BRAZILIAN LIVESTOCK.—The United States and northern Europe supply the largest share of the improved breeds of imported livestock in Brazil. The disadvantages of such importation (*Daily Con. and Trade Rep't*, No. 3420), are the change to the shorter, coarser grasses and the inferior water supply. The change from these northern countries to Argentina is, however, less radical, the animals become acclimated more readily, and are then, in turn, quickly acclimated to Brazilian conditions. Argentina and Uruguay, therefore, supply notable quantities of such re-exported and partly acclimated stock. The yak breeds of native Indian cattle are imported from India and adapt themselves quickly to the climate of Brazil, which is similar to that of their native land. I. B.

MINERAL WEALTH OF COLOMBIA.—The mineral wealth of Colombia is perhaps more varied than that of any other country of South America: gold (the principal mineral wealth), immense petroleum districts, coal in great quantities, iron, copper, lead, tin, asphalt, salt, arsenic and platinum are the most important on the long list. The total production of gold since the Conquest (up to 1890), is estimated at \$688,000 (*Daily Con. and Trade Rep't*, No. 3414). More than two-thirds of this amount was from placers, the rest from quartz mines. Scarcely a rivulet of the province of Antioquia, by far the richest gold province of Colombia, is without gold-bearing gravels, so extensively are the mountains crossed by veins of gold-bearing quartz. The entire Cauca Valley has been a never-failing source of support to the poorer classes, who make a regular industry of washing and rewashing the auriferous sands after the yearly freshets, a process carried on for generations. Wing dams are built on the river bends, the inclosure is pumped out and the sand excavated and washed. Single excavations have yielded \$20,000 and over during a single season. The most serious drawback to mining, as to other development, is the lack of adequate transportation facilities, especially felt in mining on a large scale, where heavy machinery is required. Freights are excessive, whether by river or rail, or by mule caravan. I. B.

THE RIVER PARANÁ: AN ECONOMIC SURVEY.—This is the title of an authoritative paper by W. S. Barclay (*Geog. Jour.*, Vol. 33, No. 1, 1909). This chief affluent of the River Plate is subject to sweeping changes of position in time of flood, though it is of great economic importance for transportation in this South American "Mesopotamia." Its own floods are greatly augmented by those of the Paraguay, which come down at the rate of 3 knots an hour, are 20 feet deep and 20 miles wide, and run over an alluvial bottom as wide as the English Channel. The course of the Paraná is from within a few miles of the coast of Brazil westward toward the interior for several hundred miles and finally southward to the

Plate. It thus, like the Uruguay, describes a great arc with the seacoast as a chord. The downstream course is broken by the famous falls of the Iguazú, 3,300 yards in length. Of even greater interest are the Guayrá Falls, above those of the Iguazú in the same system, where the total fall, including cascades, is 310 ft., with the gorge walls at one place but 200 ft. apart; and a volume of water reckoned at 13,000,000 cubic feet per minute, an amount which must be doubled or trebled in time of flood. It is one of the most compact water-power centres awaiting development.

The inundations of these rivers are inconceivably extensive. The Paraguay, on May 25, 1905, rose 12 ft. at Asuncion and inundated the Gran Chaco far and wide. At the mouth of the Iguazú, the Paraná rose 146 ft. and so dammed up the waters of the former that during five days its gorge filled to 210 ft., the cascades became flush and disappeared; and the river overflowed in all directions to the Paraná through the surrounding forest, a distance of $7\frac{1}{2}$ miles.

The main dependence of the Indian river tribes is upon fish, apart from wild honey, berries, and a few nuts. The fish are difficult to catch in time of flood, and impossible to preserve owing to the absence of salt. On the frontier of Entre Rios are beds of gypsum, 2,000 tons monthly being shipped for plaster to Buenos Aires from La Paz. Better communication with the Paraná Valley from the coast, upon which the development of the region so intimately depends, may be accomplished by rail from the steep Brazilian coast or by shallow-draught river steamers. A 31-mile railroad around the Guayrá cataracts with 3-6 ft. lines of steamers would bring the great forestal wealth of the region to Buenos Aires. At present the 50,000 settlers in the pine forests back of the coastal plateau are commercially entombed. The widely inundated valley flats have a definite grazing value if they have a definite slope. The higher portions are grassed and these constitute about one-half the inundated area. The unoccupied savannahs in Matto Grosso and Goyez alone are as large as Texas. Their development would bring corresponding development to the forested areas above them. The jerked beef and extract factories are outbid by the frozen-meat establishments which have recently raised prices on good stock. The free grazing interests or squatters with poorer cattle are, therefore, driven north by the growing exclusiveness of and development by the real owners. This new, strong current of colonization toward central Brazil is one of the most interesting migrations of our day, both as to its cause and its developmental effects in the tropic and sub-tropic interior of Entre Rios, Corrientes, Gran Chaco, and Matto Grosso.

L. B.

WHALING IN THE SOUTH ATLANTIC.—Late in the last century, efforts to revive the whaleries in the far South Atlantic, which had been abandoned for many years, failed completely because the Dundee and Norwegian interests, that sent out exploring parties, did not succeed in finding whales in sufficient number to warrant a revival of the enterprise. It was discovered, however, by Captain Larsen, Commander of the steamer *Antarctic* of the Nordenskjöld Antarctic expedition (1901-3), that there were whaling grounds of much promise in the waters far and wide around the large island of South Georgia. As a result of this discovery, the "Compania Argentina de Pesca" was, in 1903, organized at Buenos Aires with ample capital, and Captain Larsen was placed in charge of the company's whaling enterprises.

This company has built a station on South Georgia, including 17 buildings, and keeps there, in summer, 160 men who try out and prepare the oil for market, the dead whales being towed to the station by the whaling fleet. In the last fishing season about 1,000 whales were killed, each vessel usually returning to the station with from four to six dead whales in tow. Three large transports are employed in carrying the oil to Buenos Aires, where they load up with coal and supplies for the station. On one occasion, the supply of empty barrels at South Georgia gave out and to avoid this embarrassment in future, twelve iron tanks have been provided, each of which will hold 350 barrels of oil. Of the output last season, 9,000 barrels of oil were retained for consumption in Argentina and 18,000 barrels were shipped to Europe. Companies organized in Scandinavia are entering the same whaling field (*Geog. Zeitsch.*, No. 1, 1909).

AFRICA.

TRANSPORTATION ALONG THE CONGO.—Few transportation enterprises in tropical Africa to-day are of so much importance as the work in progress of extending railroads around the unnavigable stretches of the Congo. This work is being rapidly pushed and, when it is completed, there will be steam transportation, by river and rail, from the mouth of the Congo to Kalengwe on the Lualaba branch of the Upper Congo, 2,185 miles from the Congo mouth. This continuous steam route from the Atlantic into the rich copper region of Katanga, the large south-eastern province of the Belgian Congo, is divided into sections as follows:

Banana to Matadi, ocean and river steamers, 90 miles; Matadi to Leopoldville, railroad (in operation), 248 miles; Leopoldville to Stanleyville, steamboats (a large number in service for years past), 992 miles; Stanleyville to Ponthierville, railroad (in operation for two years), 77 miles; Ponthierville to Kindu, steamer (4 now in the service), 195 miles; Kindu to Kongolo or Buli (railroad now building), 186 miles; Kongolo to Kalengwe, steamer (canalization necessary to make the course available for steamers throughout the year), 397 miles.

Two commissions have made a study of the improvements needed in this final stretch of navigation to make it fully available and canalization will be in progress while the railroad is being built just below it. It is expected that this railroad will be completed next year. The details relating to this great enterprise, which will give the rich mining region of Katanga an outlet to the Atlantic, are published in *Le Mouvement Géographique*, No. 2, 1909.

COTTON GROWING AND NIGERIA.—Mr. C. A. Birtwistle, in a paper thus entitled (26 pp., reprinted from *Proc. Roy. Col. Institute*), concludes that the United Kingdom has in Nigeria a proved cotton-growing country and a large agricultural population, with more than sufficient land to produce, eventually, the whole of Lancashire's requirement of raw material of the American quality. Although the present uneven distribution of population and the lack of transport facilities must, for some time, tell against the maximum, he believes that a really appreciable quantity of cotton will come out of Nigeria within five years of the opening of the Kano Railroad. Parliament has sanctioned not only the construction of the railroad from Baro, on the east bank of the Niger, to Kano, the most famous town in the western Sudan, but has also approved of the plan of extending the Lagos line across the Niger at Jebba and thence to the Baro-Kano line near

Zungeru and it is hoped that these lines will be completed in about five years. Large cotton regions will be inaccessible until railroads are provided. The accompanying sketch map shows that the British Cotton Growing Association has established ginneries at 10 points along the Lagos R. R. and the Niger.

THE RAILROAD TO TANANARIVO COMPLETED.—On Jan. 1 last, the railroad connecting the east coast of Madagascar with Tananarivo, the capital of the island, on the central plateau, was completed. Its present eastern terminus is at Brickaville, a short distance in the interior, on the navigable stretch of the Vohitra River, the railroad being connected, by river and canal navigation, with Tamatave, the leading port of eastern Madagascar. Ultimately, the track will be extended to Tamatave. The mountains and forests of the first section of the road, between Brickaville and Mangoro, 103 miles, presented great difficulties and very serious engineering problems, but the second section, between Mangoro and the capital, 64 miles, was less laborious and expensive, both on account of the more suitable nature of the land and of the experience gained in the earlier part of the work. The track at Tananarivo, however, is 2,027 feet higher than at Mangoro. The work was begun in 1901 and it has cost \$11,670,200.

For many generations all commerce between this interior high plateau and the Indian Ocean was carried on the backs of men along one of the most difficult foot routes in the world. This very expensive means of transportation was supplanted after the French occupation, by an automobile freight route, built at large cost; and the railroad now places the capital, the largest town in Madagascar, within easy reach of the sea.

FOSSIL BEDS IN GERMAN EAST AFRICA.—In 1907, Professor Eberhard Fraas discovered a fossil bed in the upper Cretaceous formation of Tendagu, in the Lindi district of German East Africa. This deposit contained a number of bones of Dinosaurs, lying, for the most part, in their natural position in the marl and sandstone from which they have weathered out so that they protrude at the surface. The specimens brought back by Professor Fraas are now mounted in the Museum at Stuttgart, and have been shown to belong to a herbivorous Dinosaur which must have reached a length of about 48 feet. It has been named *Gigantosaurus*. The specimens are incomplete, and so much interest has been aroused by them that the German government has decided to send a special expedition to the region, to examine the deposit in detail and to make additional collections of fossils. (*Scott. Geog. Mag.*, March, 1909.)

PROGRESS OF EGYPTOLOGY.—The *Archaeological Report* for 1907-8 of the Egyptian Exploration Fund describes as the most interesting recent event, connected with the Egyptian discoveries, the publication by Sachau of the petition of the Jews in Elephantine to the Governor of Jerusalem, with its surprising revelation of Jewish religious sentiment not many years after Nehemiah and Ezra had introduced their political and religious reforms. For Egyptology, however, the most interesting results have come from the survey of Lower Nubia where new avenues of information on the history of humanity are being opened. Dr. Elliot Smith and his scientific staff find, in the skeletons and mummies which are being exhumed by the thousand, an unrivalled field for somatological research and for the investigation

of the history of diseases. Cemetery after cemetery has been discovered and excavated or tested in the history of the population of the Nubian frontier and its relation to Egyptians is thus revealed.

ASIA.

JAPAN'S NEED FOR WIDER FARM LANDS.—In the *World's Work* for April, Mr. Adachi Kinnosuke discusses the necessity that confronts Japan of providing a larger food-supplying area for her growing population. Japan has in her Empire 25,000 square miles of arable land and the serious problem arises how, decently, to maintain the present population of 50,000,000 souls and provide sources of food for the future augmentation of the race. To the farm products, now available, must be added the fish and other food resources of adjacent waters, now yielding annually about \$50,000,000 worth of food substances. Japan has already widened her opportunities by the practical absorption of Korea, but this affords only temporary relief and is not a full remedy for the economic pressure. The remedy must be found, and the Japanese believe they have already found it, in Manchuria where about 15,000,000 people occupy a territory in which there are nearly 200,000 square miles of arable land now only partly and imperfectly cultivated. Mr. Kinnosuke intimates that, while Japan desires only friendly relations with China, food is a necessity and, if the Japanese are not permitted to colonize Manchuria peacefully, there is only one thing that they can do and that is to enter the country, anyhow. In his opinion, the greatest question before Japan is the necessity of assuring the nation adequate food resources in neighbouring regions outside of the Empire.

RECLAMATION OF LAND IN MESOPOTAMIA.—The Beirut correspondent of the Egyptian *Gazette* writes that in October last, four engineers, the vanguard of Sir William Willcocks's expedition to Mesopotamia, arrived there and went to Aleppo by train whence they started by carriage across Mesopotamia for Bagdad. Sir William is adviser to the Ottoman Public Works Department. He began his operations in Mesopotamia last winter with surveying and leveling, as preliminary to the scheme of introducing irrigation on a large scale, especially along the tributaries of the Tigris and the Euphrates. The surveys in Mesopotamia will occupy over two years. Sir William Willcocks takes to his new work, the practical knowledge he gained during many years in the irrigation service of Egypt. In his opinion, the Tigris and Euphrates need works similar to the Nile barrages and regulators and on these types he expects that the works in Mesopotamia will be built. The Irrigation Department of Egypt has expressed its desire to place its information, plans, etc., at his disposal.

TRAVELLERS IN RUSSIA CENTRAL ASIA.—Foreigners are, in principle, not allowed to enter the Russian possessions in Central Asia. Exceptions are, however, made to this rule and permission is granted in special cases to foreigners who send their requests to the Russian government through the diplomatic representatives of their countries at St. Petersburg.

Persons who are not aware of the regulations sometimes enter Russian Central Asia where the local authorities are compelled to stop them. The number of such cases has recently been increasing and the Russian government, therefore, is trying

to give wide publicity to the regulations in question, in the interest of travellers themselves, in order that they may avoid, in future, the many inconveniences arising from infractions of the law. The Russian government declines all responsibility for delays and losses incurred by violators of the law. Requests for permission to travel in Central Asia should be sent several weeks before the date of arrival of the applicants on the frontier of Russian territory in Asia. (*Board of Trade Jour.*, No. 637, 1909.)

EUROPE.

PROFESSOR GOODE'S STUDY OF EUROPEAN PORTS.—Last year, Professor J. Paul Goode, of the University of Chicago, studied the great ports of Europe, in behalf of the Chicago Harbour Commission. In his report to the Commission, "The Development of Commercial Ports" (103 pp.), he gives the results of his visits to all the ports discussed, shows what the European ports are doing and makes suggestions as to the development of Chicago's water front and the utilization of her enormous commercial opportunities. The work includes many black-and-white maps, diagrams, plans and tables, illustrating ports and their growth, the commercial resources tributary to them, the rail and water feeders of their commerce, world-trade routes, etc., and a coloured map of Chicago on which are imposed plans of the Antwerp dock extension and of the Free Port of Hamburg.

The work is a valuable addition to the studies previously made of great ports, of which the most comprehensive example is Dorn's "Die Seehäfen des Weltverkehrs," now somewhat out of date, especially in its statistical material. The author made a careful examination, on the ground, of 14 of the great ports of Europe. His investigations were everywhere facilitated by the local authorities and he studied each port with reference to the hinterland it serves, its organization and administration, its facilities for handling traffic and its relations to the inland and municipal systems of transportation. The topical divisions under which Liverpool is treated, illustrate the methods applied in the discussion of each port:

Liverpool's situation on the estuary of the Mersey, making it the logical gateway of the western half of the Midlands; its advantage in being on the side of England nearest to America, whose cotton supplies the Lancashire spinneries and whose farm staples are a large part of the food of the industrial toilers; the tidal range of 31 feet and the shifting sandbars overcome by remarkable port works; pre-eminence of the port largely due to the port administration, described in some detail; the receipts and expenses of the Harbour Board, the income of the port from vessels and goods and all the factors that make Liverpool a port of the highest excellence.

In Part II, given to the past, present and future of Chicago, are many ideas and comparisons suggested by the preceding study of European ports. Not a few of the ideas are regarded as practicable and advantageous for adoption in the future development of Chicago. In one of the maps, nine European countries are superimposed on the area which is considered to be commercially tributary to Chicago. This Chicago area has now a population of 28,000,000, while the nine European countries are supporting 184,315,000 human beings, a striking illustration of the possibilities of future development in America.

THE STUDY OF SOILS.—The Society has received from Dr. L. de Lóczy, Professor of Physical Geography at the University of Budapest, and Director of the Hungarian Geological Institute, a Circular issued by the Institute announcing a conference at Budapest on April 14th-24th, 1909, to consider the unsatisfactory conditions of the investigation of soils, from an agricultural point of view, and to take action for their improvement. While geologists of the Institute were studying soils in Rumania and Russia, with colleagues of those countries, they became convinced that to make such researches more valuable it will be necessary to establish a systematic method of comparing soils, based upon their chemical analyses. At present, methods of studying soils, in one or another country, differ widely. It is sometimes impossible, on this account, to compare the results and maps. Many of the public, therefore, distrust these investigations, in spite of every effort to make them serviceable to agriculture.

The conference has been called to discuss the whole subject and to decide, if possible, upon a classification of soils, upon uniform methods of investigation in the field and in the laboratory, and upon a uniform nomenclature. The Institute believes that Hungary is the best place in Europe for the purposes of such a meeting because all varieties of soils are to be found there.

THE CITY OF SAARBRÜCKEN.—The three cities on the Saar (Saarbrücken, St. Johann, and Malstadt-Burbach), became at the beginning of this year one consolidated city with a population of nearly 100,000. The union is the result of long negotiation. The new municipality has the name Saarbrücken.

THE ELEVENTH INTERNATIONAL GEOLOGICAL CONGRESS.—The next session of this Congress will be held in Stockholm in 1910. Mr. J. Gunnar Andersson, Secretary of the Congress, says that the geological problems and phenomena of Sweden and the polar regions will be especially prominent in the programme. A number of important excursions will be arranged and one of them, before the meeting of the Congress, will comprise a visit to northern Sweden and Spitzbergen.

POLAR.

A LETTER FROM MR. STEFÁNSSON.—Writing from Flaxman Island, Alaska, Oct. 14, 1908, Mr. V. Stefánsson says his party of two whites and six Eskimo then had about three months' provisions remaining, partly in Smith Bay, partly at Flaxman. In order to conserve these supplies, Dr. Anderson and one family were to go about 125 miles south into the mountains to try to live on sheep while the rest went west to the Colville Delta where 12 deer had previously been killed and cached. Anderson was later to fall back on the Flaxman reserves while Stefánsson proceeded to the Smith Bay cache. He says: "I suppose we shall pull through with an occasional tightening of the belt. Personally I almost enjoy the prospect."

He had 22 dogs, "all with consistently good appetites." He expected his original plans to work out "fairly well." "We shall spend the first year in the Colville as planned, and shall probably get pretty far to the east next summer, whether it be Coppermine River and its mainland or one of the islands of Banks Land or Victoria."

"I shall probably be able to visit the coveted aborigines of the Colville and (I hope) be able to show some of them the first white man of their experience."

F. S. D.

MR. WELLMAN'S ARCTIC PLANS.—The airship for the Wellman Polar Expedition, which has been completed at Gennevillier's, is to be brought over to London and exhibited at the Aero Exhibition at Olympia on March 19. This airship, which is named "The America," is about 200 feet in length, with a diameter of 50 feet and is designed to carry not merely passengers, but also sledges and dogs. It is fitted with a powerful engine and a petrol tank made specially large.—*London Times* (Weekly Edition), March 5.

DR. F. A. COOK'S ARCTIC EXPEDITION.—Dr. Frederick A. Cook, on Aug. 30, 1907, 35 miles north of Etah, Greenland, parted from the hunting expedition which took him there (one man, Rudolph Franke volunteering to stay with him) and went into winter quarters at that place. He had three-years' supply of provisions, a winter house, coal for three years, three stoves, 150 gallons of alcohol, tools for iron and woodwork, hickory for 15 sleds, scientific instruments, and, in fact, about all that he needed. Between his headquarters' camp and Etah, seventy Eskimo were to winter with 150 dogs, and he intended to draw on this village for dogs and men. He built 13 sledges and made his preparations; and towards the end of February, 1908, with two Eskimo and a number of dogs, he crossed to Cape Sabine and struck westward for Cape Thomas Hubbard, the northern extremity of Axel Helberg Land, where Sverdrup had been in 1900 and Peary in 1906. Arriving there, he sent back a letter, March 17, 1908, to Franke, who had remained at the main camp. This related his progress; stated that he was in good health; that his prospects were excellent; and directed Franke to return to the United States in case Dr. Cook did not come by a certain date. Cook not arriving at the time specified, Franke was picked up at Etah and brought home on Commander Peary's auxiliary steamer.

Dr. Cook was probably striving to reach Crocker Land, seen in the far distance in 1906 by Peary from the heights of Cape Thomas Hubbard. From Crocker Land, Cook would make his attempt on the Pole. As he failed to return to his main camp at the time agreed on, it is feared that some of the numerous obstacles to well-laid plans in the Arctic regions may have placed him in a position where he needs help, and the Arctic and the Explorers Clubs have, consequently, appointed a committee to organize and send out, July 1, 1909, a relief expedition which Mr. Dillon Wallace has volunteered to direct. The office of this committee is at the Explorers Club, 29 West 39th Street, New York. The purchase of a staunch schooner is in prospect on which Mr. Wallace will be taken to Etah with enough supplies for 15 months. Should Cook not have arrived at Upernivik or Etah, Wallace expects to follow his trail to Crocker Land and beyond.

F. S. D.

THE SWEDES IN SPITZBERGEN.—It is 151 years since a Swedish naturalist first went to Spitzbergen and 51 years since the first Swedish expedition began scientific explorations in that archipelago. A great part of the literature of these

explorations, being written in Swedish, is almost unknown to scientific men in other countries. Last year *Ymer* printed a summary in English of the scientific work of the Swedes in Spitzbergen which now appears separately. Prof. A. G. Nathorst contributes an historical sketch of Swedish scientific work there, a list of leading members of the expeditions follows, J. M. Hulth supplies a bibliography, and a list of maps, compiled by G. De Geer, completes the pamphlet; Dr. Nathorst, mentioning scientific work now in progress, says that Prof. Hj. Théel, assisted by other zoologists, is continuing his great work on the northern and Antarctic invertebrates in the Swedish State Museum; Prof. Nathorst is studying the fossil floras, Prof. J. F. Pompeckij of Göttingen, the Jurassic faunas, Dr. C. Wiman, Carboniferous faunas and Triassic saurians, and the Swedish Commission for the Measurement of an Arc of Meridian is still publishing the results of its investigations. Of the forthcoming maps, the large map of Ice Fiord in 1:100,000, with special maps of the largest glaciers in 1:20,000, are especially mentioned as based mainly on photogrammetrical surveys by G. De Geer, in 1896 and 1908.

VARIOUS.

THE AMERICAN GEOGRAPHICAL SOCIETY.—A regular meeting of the Society was held at the Engineering Societies' Building, No. 29 West Thirty-ninth Street, on Tuesday, March 23, 1909, at 8.30 o'clock P. M.

Vice-President Greenough in the chair.

The following persons, recommended by the Council, were elected to Fellowship:

Cav. Luigi Solari,	George Bird Grinnell,
Dr. Felix Leibinger,	Charles A. Hanna,
Frederick Palmer,	Cornelius Rea Agnew,
George R. Fearing,	Lawrence Gourlay,
Warren Delano, Jr.,	Mayo W. Hazeltine,
Allen W. Evarts,	The Rev. Alexander Hamilton.
P. S. du Pont,	

The Chairman then introduced Mr. Arnold Henry Savage Landor, who addressed the Society on his expedition "Across Widest Africa."

Stereopticon views were shown.

On motion, the Society adjourned.

The number of maps recorded in the *Kartographische Monatsbericht* last year, the first of publication, was 1,226. Dr. Haack, the editor, invites the co-operation of all who are especially interested to make this list of maps as complete as possible.

Dr. Sven Hedin, on January 17, arrived in Stockholm, where the King of Sweden presented him with the Grand Cross of the Polar Star.

Prof. Dr. Max Friederichsen, of the University of Bern, has accepted a call to the chair of geography in the University of Greifswald.

Leading men of Copenhagen have contributed the sum necessary to erect a memorial to the late Mylius Erichsen and his companions, Hagen and Brönlund, who perished in 1907, after completing their survey of the northeast coast of Greenland. The memorial will take the form of a lighthouse to be erected at the entrance to the harbour.

The German section of the German-Portuguese Boundary Commission has completed the delimitation of that part of the Portuguese Angola-German South-west Africa boundary lying between the Rovuma R. and Ras Lipun. It has been marked with a monument at every kilometer.

The Hudson-Fulton Celebration Commission has issued a brief history of Henry Hudson and Robert Fulton with suggestions as to the general commemorative exercises and children's festivals during the coming celebration. The author is Dr. Edward Hagaman Hall.

The edition of Stieler's Hand Atlas, adapted for the use of the English-speaking public, has been prepared by B. V. Darbishire of Oxford, England. The maps are the same as those in the German edition but the explanatory matter on each sheet is translated into English and appears on the back of the map.

Mr. R. H. Whitbeck, long on the educational staff of the New Jersey State Normal School, of Trenton, N. J., has been appointed assistant professor of geography at the University of Wisconsin. His courses will relate chiefly to the preparation of teachers in the methods of presenting physical and applied geography in secondary schools. He will also devote some time to high school inspection throughout the State.

Congress has appropriated \$5,000 for the erection of a memorial to Major J. W. Powell on the edge of the Grand Canyon of the Colorado, which he explored.

Mr. J. G. Bartholomew, head of the Geographical Institute, the well-known map house of Edinburgh, has been elected an honorary corresponding member of the Geographical Society of Paris. His house has long been prominent among the leading cartographic establishments of the world, and his products, distinguished by scientific geographical supervision, have had a favourable effect upon the improvement of general map-making in Great Britain.

Dr. Gustav Steinmann has returned to Germany after eight months of explorations in Peru. He has made large scientific collections, most of which will be deposited in the Geological Museum of Berlin.

Mr. John William Brooke, of England, was recently murdered while making geological investigations in Szechuan, China. A band of thieves attempted to rob his camp and Mr. Brooke was killed in the ensuing fight.